JPRS 31675

31 August 1982

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 160

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author. if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 81675

31 August 1982

WORLDWIDE REPORT

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 160

CONTENTS

WORLDWIDE AFFAIRS

Cheysson Cited on Nuclear Fuel to India
(XINHUA, 8 Aug 82) 1

ASIA

AUSTRALIA

Deputy PM Anthony Threatens U. S. Over Uranium Ban
(John Short; THE SYDNEY MORNING HERALD, 1 Jul 82) 2

Debate Over Nuclear Policy Continues to Rock Labor Party
(Various sources, various dates) 3

North-West Cape Issue, by William Pinwill
Debate in National Executive, by Michelle Grattan
Patrick White Warning, by Paul Kelly
Adoption of Softer Stand, by Michelle Grattan
Text of Party Position
Party Leaders' Debate, by Paul Kelly

Biggest Uranium Project, Jabiluka Mine, Given Clearance
(Various sources, various dates) 12

Aboriginal, Land Council OK's
1984 Start-Up Prediction

Fraser Proceeding With Laws Permitting Nuclear-Ship Stops
(Russell Schneider; THE WEEKEND AUSTRALIAN,3-4 Jul 82) 14

Expert Predicts Good Prospects for Australian Uranium
(THE COURIER-MAIL, 3 Jul 82) 15

Teachers Draw Line at Working Near Uranium Mines
(THE COURIER-MAIL, 1 Jul 82) 16

South Australia Lays Groundwork for Uranium Enrichment
(Peter Blunden; THE AUSTRALIAN, 7 Jul 82) 17

INDIA

Briefs

Peaceful Purposes for Atomic Energy 18
French Minister's Visit 18

PAKISTAN

Peaceful Purpose of Nuclear Program Asserted
(Editorial; THE MUSLIM, 2 Aug 82) 19

TAIWAN

Construction of 4th Nuclear Power Plant Delayed
(International Service, 31 Jul 82) 20

VIETNAM

Soviets, Vietnamese Repairing Nuclear Reactor
(NEW STRAITS TIMES, 20 Jul 82) 21

LATIN AMERICA

ARGENTINA

Former CNEA Official Foresees Changes in Nuclear Plan
(Jorge Sabato Interview; O ESTADO DE SAO PAULO,
25 Jul 82) 22

BRAZIL

Briefs

Nuclear Bomb Projects Denied 26
Demonstration Staged in Angra 26

CUBA

USSR To Aid in Building Cienfuegos Nuclear Plant
(International Service, 5 Aug 82) 27

SUB SAHARAN AFRICA

SOUTH AFRICA

Fear of Possible Nuclear Contamination Voiced
(Bruce Heilbuth; THE STAR, 26 Jul 82) 28

USSR

IAEA 'Control' of Nuclear Energy Proposed
(TASS, various dates) 29

Eleven Member States
'Negative Phenomena' Noted

WEST EUROPE

DENMARK

Electric Power Companies Sign Contract With Nuclear Research Center
(Tommy Moller; INFORMATION, 27 Jul 82) 31

FEDERAL REPUBLIC OF GERMANY

Progress in Research on High Temperature Reactor
(Kurt Rudzinzki; FRANKFURTER ALLGEMEINE, 21 Jul 82) 33

FRANCE

Phenix Reactor Malfunctions: Causes Cited
(REVUE GENERALE NUCLEAIRE, May-Jun 82) 37

Report on Fuel Cycle Urges More Reprocessing Capacity
(REVUE GENERALE NUCLEAIRE, May-Jun 82) 40

Briefs
Chiron Fuel Element Problem 44
Cruas Nuclear Plant Tests 44
COGEMA Buys Uranium Interest 44
Paluel's 1300 MW Plant 45

CHEYSSON CITED ON NUCLEAR FUEL TO INDIA

OW081901 Beijing XINHUA in English 1852 GMT 8 Aug 82

[Text] New Delhi, August 8 (XINHUA) -- France will not ask for any special safeguards or joint determination for reprocessing spent fuel from India's Tarapur atomic power plant under a proposed agreement on uranium supply to India, French Foreign Minister Claude Cheysson told a press conference here today. The fissile materials from the reprocessing, however, would be subject to the control of the International Atomic Energy Agency (IAEA) as applicable to other countries, he added.

When asked whether the United States would be a party to the Indo-French agreement, he said, since the proposed agreement would be signed shortly between India and France, "why should they be"? He said his country will be pleased to supply nuclear fuel for the Tarapur plant.

France had been requested to supply low degree of uranium and technique in this field, he noted.

C. Cheysson, who arrived here for one day's visit to India, called on Mrs. Indira Gandhi and talked with India's external minister, P. Narasimha Rao, for two hours. The two sides were satisfied with the expansion of Indo-French cooperation in the economic matters and trade, and expressed the hope for further progress. Cheysson left for home tonight.

CSO: 5100/2240

AUSTRALIA

DEPUTY PM ANTHONY THREATENS U.S. OVER URANIUM BAN

Sydney THE SYDNEY MORNING HERALD in English 1 Jul 82 p 1

[Article by John Short]

[Text] CANBERRA. — The Deputy Prime Minister, Mr Anthony, threatened yesterday to ban American investment — and the use of its technology — in Australia's proposed uranium enrichment industry if the United States limits uranium imports.

Speaking at the National Press Club in Canberra, Mr Anthony said: "Why have US technology and capital to enrich uranium when we can't sell it back into that country?

"Naturally if the United States thinks that they are going to get the advantage of selling their technology here and then not welcome us marketing in their country then I doubt if we would be interested."

He said Australia had made its position clear to the US Vice-President, George Bush, when he visited Australia in April.

The Deputy Prime Minister also:

- Said the Government would maintain preferential interest rate arrangements on bank loans for home-buyers, farmers, and small businessmen — contrary to the recommendations of the Campbell Inquiry into Australia's financial system.
- Cast serious doubts on the Government accepting the Industries Assistance Commission's recommendations to immediately begin phasing down tariffs over 10 years and reduce export incentives as from June 30, 1983.
- Set out Australia's proposals for implementing Mr Fraser's plan to increase international trade by reducing protection.

The Deputy Prime Minister's threat of retaliation against America comes at a time when a special committee of Congress is considering legislation proposed by Senator Domenici, a Republican from the uranium-producing State of New Mexico, which would severely limit uranium imports.

Under the proposal American companies using uranium to generate electricity would be required to buy at last 80 per cent of their uranium in the US — thus restricting overseas uranium to 20 per cent of the American market.

Mr Anthony said Australia was "vigorously opposing" the proposal and that he did not believe it would be adopted.

But yesterday he left no doubt that if the legislation was adopted Australia would take tough retaliatory action.

"I have made numerous representations in the United States and when Vice-President Bush was out here — again when I saw him in Washington (earlier this month) — and I have spoken to various US officials about it.

"If they move in that direction then it will have very serious consequences for Australia's prospects for selling uranium in the United States.

"I think it would naturally have consequences on the US being involved in any enrichment program in Australia."

CSO: 5100/7544

AUSTRALIA

DEBATE OVER NUCLEAR POLICY CONTINUES TO ROCK LABOR PARTY

North-West Cape Issue

Canberra THE AUSTRALIAN in English 20 Jun 82 p 2

[Article by William Pinwill]

[Text] AMID growing confusion over his recent defence statements, the Leader of the Federal Opposition, Mr Hayden, has reaffirmed that a Labor Government would close the North-West Cape base unless it obtained the right of veto over American nuclear firing orders.

A spokesman for Mr Hayden said yesterday his failure to mention the veto in a speech on Monday did not mean he had abandoned the pledge.

But sources close to the deputy leader and ALP spokesman on foreign affairs, Mr Bowen, said it was their understanding that Mr Hayden had agreed to drop his earlier demand for Australia's "mandatory consent" to nuclear firing orders.

The Opposition spokesman on defence, Mr Gordon Scholes, said the Labor platform on defence and foreign affairs did not include the demand for a North-West Cape veto, and so was not part of Labor policy. But he said the bases were Mr Bowen's responsibility.

Mr Hayden told a disarmament seminar in Sydney on Monday that Labor would renegotiate the agreement covering the joint naval communications station at North-West Cape, "aimed at achieving our requirements".

But he added that a proposal by Mr Bowen to send an Australian representative to Washington to monitor US strategic policy "would serve as an interim measure".

Mr Hayden's spokesman said this was necessary because the agreement was not due for renegotiation before 1988.

"There is no intention to withdraw from what Mr Hayden said at the National Press Club in April last year," the spokesman said.

On that occasion, Mr Hayden said: "We would seek to renegotiate the North-West Cape agreement to provide, first, that Australia's consent is mandatory for all orders to initiate military action which flow from the station.

"If the US would not accept these reasonable provisions designed to protect our national sovereignity, then we would ask them to wind down the operations of North-West Cape as rapidly as possible."

The US Government has indicated it will not allow Australia to veto messages sent through the station.

The North-West Cape issue is now expected to join nuclear ship visits as a matter of controversy at the ALP National Conference in Canberra next week.

Mr Hayden's reversal of policy to allow visits by nuclear-armed warships has angered the left-wing of the party.

It is now known that the Victorian Premier, Mr Cain, consulted Mr Hayden about his proposed ban on nuclear ships in Victorian ports before the Prime Minister, Mr Fraser, was told of the plan.

ALP colleagues previously believed Mr Hayden had been caught unawares by Mr Cain's proposal. But well-placed sources told *The Australian* that Mr Hayden had not only been told in advance but had indicated he would oppose visits by nuclear-armed ships.

Debate in National Executive

Melbourne THE AGE in English 2 Jul 82 p 3

[Article by Michelle Grattan, chief political correspondent]

[Text] **CANBERRA.** — Members of the ALP national executive were sharply divided yesterday when they debated the future of the party's uranium policy.

Left-wing members of the executive, including the former South Australian Attorney-General, Mr Duncan, and Mr Hogan (Vic), said that Labor's commitment to a ban on the mining and export of uranium must continue.

But other speakers, especially the leader of the ALP in the Northern Territory, Mr Collins, said this policy was no longer viable.

Mr Collins said there would be high costs in banning mining, including payment of money in lieu of royalties to Aborigines and the cost of restoring the landscape.

The deputy Opposition leader, Mr Bowen, indicated he favored a softer policy, and frontbencher Mr Hawke said that his view, which favored change, was well known.

The Opposition Leader, Mr Hayden, is expected to speak when the debate resumes today. About two hours was spent on uranium yesterday. The executive received a report from a subcommittee which has examined the pros and cons of retaining the present policy of banning mining and export.

The report made no recommendations, but it canvassed the electoral handicaps of the policy, which will be debated at next weeks' national conference.

The committee looked at the economic, financial and social implications of the uranium policy.

After yesterday's meeting, the ALP's national secretary, Mr McMullan, said the conference would consider changing policy, and he thought an accommodation was possible, but he could not predict the outcome.

The Left is confident that it has the numbers to stop a change in policy. But the Left is very concerned and angry at Mr Hayden's interpretation, in an 'Age' interview this week, of the present policy. Mr Hayden said this could allow uranium mining if a Labor Cabinet was satisfied that the conditions laid down had been met.

Mr McMullan said yesterday's debate had been promising, and there would be a lot more discussion between now and the conference.

The executive will today consider the agenda for the national conference.

Patrick White Warning

Sydney THE SYDNEY MORNING HERALD in English 6 Jul 82 p 1

[Article by Paul Kelly]

[Text] **CANBERRA.** — The Nobel prize-winning novelist Patrick White has warned the Labor Party against ditching leaders to get a better image and has appealed to the party to keep its principles on the nuclear issue.

Mr White wrote to the National ALP president, Mr Wran, on July 2 and his letter was passed about the corridors yesterday when the ALP national conference met in Canberra.

"In World War III Australians cannot hope that time and distance will protect them from advanced nuclear technology," Mr White said.

"If we don't search our conscience in the months to come and realise there is more to life than money, minerals, and missiles, we run the risk of offering ourselves for destruction as well as helping to destroy the world.

"We must remember that the most important issue today is the prevention of nuclear war."

One image from Hiroshima summed up the nuclear situation — the figure "of a naked man reported standing on a dark plain which had been his city, holding his eye in the palm of his hand."

"In the light of this symbol of humankind reduced to disbelieving dispair, let us not succumb to our own blindness" Mr White said.

"Let us not soften to gain votes or appease allies."

"Moral steel could be our most effective armament against political dishonesty at home and the ultimate physical violence which will annihilate the world."

He warned Labor against believing "that by ditching one leader for another we shall appeal to more than the odd trendy swinger, impressed by a public figure's image, the hairdo and the well cut suit rather than basic integrity."

Adoption of Softer Stand

Melbourne THE AGE in English 8 Jul 82 pp 1, 5

[Article by Michelle Grattan, chief political correspondent]

[Text] CANBERRA. — The ALP's national conference, amid emotional scenes yesterday softened the Party's anti-uranium policy so that a Labor Government could honor existing contracts.

The switch was made after days of intense lobbying. The shadow Attorney-General, Senator Evans, told the conference this manoeuvring had involved some "thuggishness" and threats to MPs' pre-selections

As delegates' names were read out during a division at the end of the debate, spectators jeered those who had voted for change and cheered delegates who had unsuccessfully supported the existing party policy banning the mining and export of uranium. Anti-uranium placards bedecked the back of the conference room at Canberra's Lakeside Hotel.

The new, more moderate policy, which would still prohibit a Labor Government from approving new mines, was carried 53 to 46. It was strongly supported by the Opposition Leader, Mr Hayden, his deputy, Mr Bowen, the spokesman on Minerals and Energy, Mr Keating, and the undeclared challenger for the party leadership, Mr Hawke. But the Victorian Premier, Mr Cain, and the Labor leader in the Senate, Senator Button, voted against it.

The vote was another defeat for the Left, and a victory for Mr Hayden, although he would have preferred the policy to be softer still. Federal frontbencher, Mr Uren, a leader of the Left, said after the vote: "It is a sad day for the progressive forces."

The new policy removed the obligation, imposed by the 1977 conference, on a Labor Government to repudiate contracts which already exist. The policy declares that the incoming Labor Government "is already committed to repudiate all existing commitments". But it adds that in light of the difficulties of repudiation, a Labor Government's "minimum position" would be "to phase out" Australia's uranium industry and allow mines which are producing now (in July 1982) to continue only under strict conditions.

Tragedy

The softer policy was moved by the Victorian party secretary, Mr Bob Hogg, of the Socialist Left. Mr Hogg told the conference that it was a tragedy that the uranium policy was being debated. But it had been impossible to prevent this, and his amendment was designed to head off other proposals which would have been "infinitely worse".

The compromise was drafted only on Tuesday night and the numbers were sewn up over the luncheon adjournment yesterday.

All State delegations were divided on the issue, but all State leaders except Victoria's Mr Cain supported the Hogg amendment, which was seconded by the Northern Territory leader Mr Collins.

Mr Cain later denied that he had bowed to pressure from the Socialist Left to vote the way he did. The policy decided was now the one which had been accepted by the whole party, he said. The decision did not affect his plans to make Victoria a nuclear-free State.

Mr Hayden, supporting the Hogg amendment, told the conference: "Our existing policy on this matter is clearly cut and dried. But the issue itself is not cut and dried." Mr Hayden said he did not interpret the Hogg motion as "an open door approval for mining".

"I regard it as a very tough anti-uranium mining proposition. But it is a sensible proposition because what it is proposing is a phasing out system which we do not have at the moment."

Moral responsibility

Mr Hayden said that although the party had legal advice that it would not be obliged to pay compensation for closing mines, such an action would, in the public view, impose "a moral, political responsibility" to compensate.

He warned that to shut mines overnight could produce a crisis in foreign investors' confidence, generating a balance of payments crisis and a "massive devaluation". "It would bring the Australian economy to a halt overnight. It would really screw down the economy. It would be devastating in its effect. We would almost become a banana republic in the standards of the condition of the economy.

"If we do not put in a transitional arrangement — that is all it is — then we present no choice to the community but the prospect of a Labor Government which will undoubtedly cause a panic and a flight of capital with a balance of payments which is enormously weak, an enormous potential for collapse. In that situation we will not even get to the starting post on election day."

All seven members of the Victorian Centre Unity Group, Mr Hawke's faction, voted for the amendment. The Centre Unity decision to support the amendment, taken only yesterday and by a very narrow vote, was crucial for the success of the mood to soften the policy.

Senator Evans told the conference that the only political risks delegates faced in voting for the amendment came from within the party.

"There has been an unprecedented degree of heaviness, bordering on occasion on thuggishness, in the way threat have been bandied about. An extraordinary degree of pressure has been placed upon those of us, and I am one of them, who face preselection in this party in the very near future.

"Certainly that is true in Victoria. John Button . . . has been faced with some very chill winds indeed in this respect. I have been faced with them. Clyde Holding has been faced with them."

Opposing the Hogg amendment, Federal frontbencher, Mr West, who led the debate for the Left, said: "Bob, it is an irresponsible document. It is not even credible, mate. It endorses the existing policy and then goes on to repudiate that policy. Delegates, do not kid yourselves, it is a pro-mining amendment."

Supporting the Hogg amendment, Mr Hawke said delegates should not delude themselves that there was some socialist principle in the uranium issue. "No other element of the world democratic socialist movement" had this policy, he said.

The "phase out" will ensure that if Labor wins power uranium mining will continue until at least the 1990s under existing contracts.

The policy adopted says that an ALP Government would "give total commitment to preventing any new mines from being developed during our period of office".

It lays down strict conditions which would be applied in Government if existing mines were to continue, and threatens that a Labor Government would apply trade embargos to ensure these conditions were met.

"For example, any contract with the French Government could only be contemplated subject to that Government ceasing all nuclear test programmes in the Pacific," the policy says.

Among the conditions laid down for continuing mines are that:

Miners, producers and users of the products of the nuclear fuel cycle accept responsibility for developing effective waste disposal and safety and health conditions.

- Measures are adopted in the International Atomic Energy Agency and elsewhere to establish new, multi-lateral approaches to a reduction in nuclear proliferation and more effective control of existing nuclear facilities.
- Satisfactory arrangements have been developed for the storage and disposal of the products of uranium mining.
- Arrangements have been established by companies, in co-operation with national health authorities, for health screening and study of employees.
- The treatment, storage or enrichment of nuclear materials in Australia is not permitted — nor is the domestic use of nuclear power.

Text of Party Position

Melbourne THE AGE in English 8 Jul 82 p 16

[Text]

This is the text of the amendment to the ALP's uranium policy.

The motion reads: That the uranium platform be implemented in the light of the following:

1.—The ALP's approach to uranium policy is dominated by its concern that the economic, social, biological, genetic, environmental and technical problems associated with the nuclear industry are unresolved, and that problems associated with the nuclear industry are unresolved, and that uranium is a source material leading to nuclear armaments proliferation, which poses the most serious threat to world peace yet experienced, and to Australian sovereignty.

2.—We have remained steadfast in our opposition to the growing propensity for reliance upon the nuclear fuel cycle as a source of energy, and for other commercial and military applications.

3.—The development of the nuclear fuel cycle has delayed the development and application of passive energy technologists more suitable to our fragile global environment.

4.—The uncritical support of nuclear technologies by Governments world-wide encouraged the nuclear industry to develop before the fundamental questions of safety, disposal techniques, effective regulatory and safety systems were tackled, and which still remain unresolved.

5. The acceptance of nuclear power as an energy alternative by developing countries has not only presented these countries and the world with a substantial safety and surveillance problem, but has provided many with the option of becoming nuclear weapons states, adding to the dangers of increased armament proliferation.

Distressing

6. Labor believes the development of a nuclear-weapons capability from civil nuclear programmes is the most distressing feature of nuclear power, and one which requires the most urgent and earnest international attention.

7. Australia is not a producer of nuclear power but is involved in the international nuclear fuel cycle as a supplier of uranium.

8. Despite widespread concern in the community, and the opposition of the Australian Labor Party and the trade union movement, commitments have been made by previous Governments to certain corporations operating uranium mines in Australia and to the Governments of customer countries, to maintain Australia as a uranium exporter.

9. We recognise on becoming Government:

A. We will inherit an existing position of Australia under the Fraser Government of having made treaties and authorised contracts of supply of uranium to a growing number of countries with little effort to impose controls and conditions on supply.

B. An incoming ALP Government is already committed to repudiate all existing commitments. In adopting our repudiation commitment an ALP Government has neither a moral, legal, or political obligation to compensation to the industry as such.

C. Understanding the difficulties which could be encountered in the implementation of that commitment, our minimum position would be a total unequivocal commitent to phase out Australia's involvement in the uranium industry, and that certain conditions as outlined will and must be applied to those mines existing in producton as of July 1982.

D. As an ALP Government we give total commitment to preventing any new mines from being developed during our period of office.

10. Accordingly an Australian Labor Party Government will:

A. Make a total commitment to exerting all possible influences on the development of creating effective international arrangements covering nuclear non-proliferation treaties, waste disposal, arms control and nuclear disarmament.

B. Review bilateral safeguard agreements governing supply under these contractual arrangements and, if necessary, renegotiate these agreements to impose conditions relating to the nuclear practices of the customer country (e.g. the cessation of French atomic testing in the Pacific area).

C. Consider applications for the export of uranium mined incidentally to the mining of other minerals on a case-by-case basis, and on the criteria of whether in the opinion of a Labor Government the mining of such minerals is in the national interest.

D. Allow no new uranium mine developments to commence or come on stream while the Government of Australia.

11. In Government, if the only recourse is to implement a policy of phasing out the industry as of July 1982, the following conditions will be applied:

A. Miners, producers and users of the products of the nuclear fuel cycle accept responsibility for developing: effective waste disposal mechanisms, satisfactory safety and occupational health conditions, proposals and funding for the decommissioning o. nuclear plants and also provide financial assistance for the development of safe alternative energy sources.

B. Measures are adopted in the International Atomic Energy Agency and elsewhere, not only to improve the technical efficiency of existing safeguard systems, but also to establish new and multilateral approaches to a reduction in nuclear proliferation and to more effective control of existing nuclear facilities.

Arrangements

C. Satisfactory arrangements have been developed for the storage or disposal of the products of uranium mining, low level waste such as equipment or material contaminated by radioactivity, spent fuel, plutonium and depleted uranium as products of reprocessing and high level waste separately reprocessing.

D. Arrangements have been established by mining companies, in co-operation with national health authorities, for health screening and study of employees, both while employed and for a period considered by medical authorities as being necessary to detect the incidence of disease related to exposure to radioactivity.

E. Not permit the treatment, storage, or enrichment of nuclear materials in Australia nor domestic use of nuclear power. While opposed to the establishment of domestic storage and treatment systems, Labor will support the development of safe long-term nuclear waste disposal technology for application to existing waste problems.

12. Consistent with clauses 9B and 9C, an Australian Labor Government will adopt the process of phasing out our involvement in uranium mining, and certain conditions will be imposed upon the producers in accordance with this policy. We will utilise our right to apply trade embargoes to ensure these conditions are met.

For example, any contract with the French Government could only be contemplated subject to that Government ceasing all nuclear testing programmes in the Pacific.

For example, any contract with the Japanese could only be contemplated subject to them withdrawing from their intention to dump waste material in the Pacific.

For example, any contract with the Finns would be subject to us being satisfied beyond all doubt that the supply of uranium was not being deflected into the nuclear fuel cycle and nuclear arms programme of the USSR.

For example, any contract with Great Britain would be subject to us being satisfied beyond all doubt that the supply or uranium was not being used to assist in developing nuclear armaments.

For example, any contract with the West Germans would be subject to them ceasing the supply of technology and equipment to countries such as the Argentine, which is leading to the establishment of yet another potentially nuclear armed country.

Any such conditions will apply to purchasing countries other and above existing international safeguard agreements being agreed to and observed.

The principles inherent above which apply to specific markets will be applied in relation to contracts to any other countries, arising out of the production of current mines, within which similar circumstances arise.

13. Labor is committed to reversing the direction of nuclear developments worldwide. As part of this commitment, a Labor Government will undertake appropriate research and provide assistance to the energy-impoverished nations of the world to find energy solutions which are more suitable to their decentralised populations and which are a real alternative to reliance upon large blocks of expensive centralised nuclear generation with extensive reticulation grids.

14. Labor will take steps in international forums such as the International Energy Agency to promote a fair distribution of available energy resources so that the rich nations are precluded from placing inordinate demands upon the world's scarce and finite fuels.

15. Nations must also be convinced that their interests are best served persisting with energy systems which utilise their indigenous fuels, and decrease their dependence upon the international oil trade, trans-national oil companies and the merchants of nuclear power.

16. As part of its comprehensive approach to uranium policy and its concern for the gravity of the international outlook for peace and security, Labor will monitor the nuclear activities of other countries and their propensity to develop weapons capabilities. In tandem with its monitoring programme and to reduce the prospect of a nuclear war, it will indefatigably pursue a policy of international arms control and disarmament.

17. If in implementing this policy opportunities for employment are effected on a regional basis, then provision will be made for adjustment assistance, compensation and alternative employment opportunities to those workers, and the provision of financial assistance to an alternative means of economic development for those Aboriginal communities adversely affected will be guaranteed.

18. On a regional basis, the provision of special assistance to those local economies adversely affected by the implementation of the policy will be given to facilitate the implementation of alternative policies for economic development.

19. In adopting the view that the onus and responsibility to meet the conditions as outlined rightly belongs to the miners, producers, and developers, we determine that an Australian Labor Party Government will have neither a moral, legal, or political obligation to compensation to the industry as such. The responsibility is theirs to meet the above necessary and reasonable conditions. It is not the responsibility of Governemnt.

20. Finally, no revision of this policy with the view of allowing the industry to develop further will be undertaken by the Australian Labor Party until and unless all of our unresolved concerns related to the industry are satisfactorily resolved and agreed to by the ALP national conference.

Party Leaders' Debate

Sydney THE SYDNEY MORNING HERALD in English 8 Jul 82 pp 1, 11

[Article by Paul Kelly]

[Excerpts] CANBERRA--In the face of earnings that the uranium issue would destroy an ALP Government, the Labor Party reversed policy yesterday and paved the way for current uranium export contracts running until 1996 to be honoured.

The conference decided to reaffirm the existing ALP uranium policy which involves repudiation of uranium sales contracts finalised under the period of the Fraser Government. It then accepted the Hogg amendment establishing a set of conditions under which the policy would be implemented.

The effect of these conditions is to give a future ALP Government the option of allowing the existing contracts--which are underpinned by investments worth $1,000 million--to be fulfilled. That is, in the words of Mr Hayden, it allows a transition period in which a Labor Government could phase out the uranium industry.

The Hogg amendment was supported by delegates from the Left, but got its majority backing from the Right and Centre.

The main opposition came from key left-wing delegates, led by Mr Uren, Mr West and Mr Ferguson from NSW, and Mr Duncan from South Asutralia.

Mr West, in an emotional appeal, said: "Bob, it is an irresponsible document, it is not even credible, mate.

"It is a pro-mining amendment. It is pro-nuclear. You know that the contracts will be filled.

"In 20,000 years maybe the name of the great Australian Labor Party will be forgotten but this stuff will still be around. Don't you see the responsibility you have to mankind?"

Mr Uren said: "I believe this document is a tragedy. I believe politically it is a stupid document. I believe that it will bring a lot of discredit to the movement, and frankly I have told Bob himself that this document is a pro-mining document."

Mr Richardson said that 21 international banks had financed Australia's uranium mines. Any repudiation of those investments would mean an economic upheaval for Australia.

"Do we think they (the banks) will take it lying down?" Mr Richardson asked.

"The answer, of course, is no. Investment into Australia will just dry up. Our capital inflow will stop and we will be faced with a balance of payments crisis."

Mr Hayden warned that implementation of the current policy "would bring the Australian economy to a halt overnight."

It would force a dry-up of capital inflow and the only recourse would be "a massive devaluation--an absolutely massive devaluation."

Mr Hayden said: "We would almost become a banana republic in the standards of the condition of the economy.

"However, in my assessment you will not even get into that position because before election day, the people who have got money here . . . are going to start hauling their money out."

Mr Hayden said that under existing policy, a Labor Government would pay $30-$40 million for environmental rehabilitation. It would face another $20 million for displaced employees.

It would have a "moral and political responsibility" to compensate the industry for its $1,000 million existing investment.

The uranium result was a major defeat for the Left wing and its NSW leader, Mr Uren, who has spear-headed the anti-uranium movement in the Labor Party for several years.

After the debate, Mr Uren said: "It's not the end, but the beginning of the struggle."

Mr Hayden welcomed the policy change along with Mr Keating. The Labor leader initiated moves to change the policy several weeks ago when he set up a special subcommittee of the national executive to study the matter. He was strongly supported by Mr Keating and Mr Richardson in these efforts which culminated yesterday.

CSO: 5100/7545

BIGGEST URANIUM PROJECT, JABILUKA MINE, GIVEN CLEARANCE

Aboriginal, Land Council OK's

Melbourne THE AGE in English 30 Jun 82 p 6

[Text]

DARWIN, 29 June. — Traditional Aboriginal owners and the Northern Land Council have given Pancontinental Mining the go-ahead to proceed with Australia's biggest uranium development, the $600 million Jabiluka mine in the Northern Territory.

The traditional owners reached agreement with senior mining company representatives at the Pancontinental Mining camp at Djarr Djarr in the Kakadu National Park yesterday afternoon.

The agreement followed a week of talks between traditional owners and negotiating teams from the Northern Land Council and Pancontinental at the site, about 250 kilometres east of Darwin.

The full Northern Land Council ratified the agreement after a 2½-hour meeting with the traditional owners at the site. The final agreement will be formally drawn up and signed by all parties at a later date.

The agreement was announced in a short statement issued by the chairman of the Northern Land Council, Mr Gerry Blitner, immediately after the meeting of the full council.

Mr Blitner replied to recent suggestions by the Federal Opposition, particularly by the spokeswoman on Aboriginal Affairs, Senator Ryan, that mining interests had placed pressure on the traditional owners to allow the development.

"We are sorry to see that the shadow Ministers for Aboriginal Affairs believes the traditional owners have been under pressure," Mr Blitner said. "But from our experience, both first hand and in the field, and from our talks with the traditional owners today, neither we, nor they, can accept her statements.

Senator Ryan said yesterday that there was no economic or social justification for the development of Jabiluka mine at this time. "It is ironic that at a time when intense pressure from mining interest is being put on traditional owners to agree to Jabiluka proceeding, yellow cake prices have fallen to a new low," she said.

The agreement has to go before the Federal Minister for Aboriginal Affairs, Mr Wilson, for approval under the terms of the Federal Land Rights Act, but this is seen as a formality. The Government has already given the Jabiluka joint venturers, Pancontinental and the American-owned Getty Oil Development Company Limited, permission to seek overseas markets for the uranium.

Jabiluka is the richest of the four identified deposits in the Territory uranium province, with an estimated lode of 200,000 tonnes of uranium and about 12,000 kilograms of gold.

Pancontinental's chairman, Mr Tony Grey, has estimated that on present prices the total value is more than $18,000 million. In full production, the mine, which will be the Territory's first underground uranium mine is ex-

pected to earn $600 million in exports each year.

The details of the financial, environmental and employment conditions of the agreement have yet to be released, but copies of the confidential draft agreement have been leaked to the media.

The joint venturers agreed to pay the traditional owners $10 million in addition to royalty payments.

The agreement sets a royalty payment of 4.5 per cent plus a payment of $500,000 a year for the first 10 years, with a royalty of 5 per cent after the initial 10-year production phase.

1984 Start-Up Prediction

Sydney THE SYDNEY MORNING HERALD in English 1 Jul 82 p 21

[Text]

ADELAIDE. — Production from the Jabiluka uranium project could start as soon as 1984, the Northern Territory Minister for Mines, Mr Ian Tuxworth, said yesterday.

Mr Tuxworth said the signing yesterday of a final agreement between the developer of the $600 million project, Pancontinental Mining, the Northern Land Council and traditional owners of the project area, located about 250 kilometres east of Darwin, would enable production to begin in 1984 or 1985.

Mr Tuxworth also said Australia would miss a great opportunity if it did not develop its uranium mines, including the Roxby Downs project in South Australia, as soon as possible.

"In the short term, if we beat you into the market it will make the future for Roxby a little difficult," he said.

"But looking to the long term, and I'm talking about the post-1990s to 2010, I think it's absolutely essential that your Roxby Downs project goes as fast as possible."

Mr Tuxworth said Australia had an ideal opportunity to become a world supplier if it moved quickly to establish its credentials as a dependable uranium producer.

"But to do that, your project here at Roxby and all our four or five mines in the territory must come out of the starting blocks in the next year or two," he said.

CSO: 5100/7544

AUSTRALIA

FRASER PROCEEDING WITH LAWS PERMITTING NUCLEAR-SHIP STOPS

Canberra THE WEEKEND AUSTRALIAN in English 3-4 Jul 82 p 1

[Article by Russell Schneider]

[Text] **THE** Federal Government will try to use Labor's modified stand on the nuclear ships issue to force a confrontation with the Senate and trigger a double dissolution election, when Parliament resumes.

Government strategists plan to seize on Labor's continued opposition to the use of Australian port facilities by nuclear-armed or nuclear-powered ships and turn it into an issue by legislating to allow the berthings.

They believe this will force the ALP caucus either to veto the legislation, bringing about an election fought on defence issues, or to renege on decisions of its own national conference.

Plans on the legislative manoeuvres to force a double dissolution have hardened in the past few days as Government tacticians look at the likely developments at next week's ALP conference.

The Government plans to introduce a bill to "allow the home-porting of allied ships" when Parliament resumes on August 17 for the Budget session.

Because some of these "allied ships" – from the United States or United Kingdom – will be either nuclear-powered or nuclear-armed, the legislation would be in conflict with the ALP policy expected to be set at the conference.

The policy, now endorsed by the Leader of the Opposition, Mr Hayden, his deputy, Mr Bowen, and other senior ALP officials, permits visits by nuclear ships but provides that "Labor opposes the use of Australian facilities for the permanent basing of foreign naval vessels in time of peace".

Liberal Party strategists have been analysing ways they can manipulate the wording, which seems certain to be approved by the conference.

They believe if the legislation allows allied vessels to have home bases in Australia, Labor senators will be forced to veto the legislation when it reaches the Senate.

This would allow the Prime Minister, Mr Fraser, to go to an election on the grounds that Labor would destroy the US alliance.

America has no plans now to base its ships in Australia. But several years ago Mr Fraser offered it a base for an Indian Ocean fleet or flotilla at the new RAN station at HMAS Stirling, near Perth.

When it introduces the legislation, the Government will argue that the question of allied rights to berth ships cannot await the outbreak of a war.

It will say the right of allies to base their warships in Australia must be spelt out in legislation rather than be subject to political delays if fighting begins.

The government moves were triggered initially by the Victorian Premier, Mr Cain, who wanted to declare his State a "nuclear-free zone" and tried to ban the entry of nuclear ships to Victorian ports.

Although Mr Hayden supported Mr Cain at first, he later adopted a Labor Defence and Foreign Affairs Committee proposal that only the "permanent basing" of foreign naval ships should be opposed.

Although the issue seems technical it is of crucial significance to the tactics of the coming Budget session when Mr Fraser will be doing his best to exploit the decisions of the ALP conference.

He is understood to be anxious to provoke circumstances in which Labor and Australian Democrat senators will combine to veto legislation on which he can argue the ANZUS alliance depends.

This would ensure any snap election is fought on defence issues.

Immediately Mr Cain declared Labor would oppose visits by nuclear ships the Government decided it would legislate to declare Commonwealth powers over foreign treaties.

CSO: 5100/7544

EXPERT PREDICTS GOOD PROSPECTS FOR AUSTRALIAN URANIUM

Brisbane THE COURIER-MAIL in English 3 Jul 82 p 27

[Text]

CANBERRA. — Australian uranium production had increased in recent years while numerous producers, especially in the United States, had cut back or stopped production, according to Mr Gordon Battey, head of the Bureau of Minerals Research's uranium assessment group.

Mr Battey said sluggish growth of nuclear power in recent years, an oversupply and falling real prices, had caused the halt.

He told the Petroleum and Minerals Review conference in Canberra that Australia and Canada were in a good position to exploit growing demand for uranium in the late 1980s and 1990s.

He said spending on uranium exploration in Australia had shown a steady increase in recent years, in contrast to most other countries.

This was partly due to the high success rate in Australia and the relatively low unit cost of discovery.

There was concern that recent developments in the market could cause investment in exploration and development now to fall short of what would be needed to ensure enough uranium to meet further requirements.

But in Australia, production had increased in recent years at Nabarlek in June 1980, and Ranger in August 1981.

However, production at the Mary Kathleen mine was expected to stop in December this year because the remaining resources would be uneconomic at current prices.

Australia was now estimated to have 294,000 tonnes of uranium recoverable at less than US$66 a kilogram.

Current world resources were considered to be adequate to meet any likely level of demand for the next 20 years.

A coal commodity specialist told the conference the expectations of the Australian industry had suffered in recent months because of economic factors, including less demand for coal by the major importing countries.

Mr Mike Huleatt said new techniques such as fluidised bed combustion would allow the use, as a fuel, of much material which was now rejected.

He said that because much of the black coal mined was subsequently washed, there was a loss of material which had amounted to about 18 percent in recent years.

CSO: 5100/7544

TEACHERS DRAW LINE AT WORKING NEAR URANIUM MINES

Brisbane THE COURIER-MAIL in English 1 Jul 82 p 14

[Text] **The Queensland Teachers Union state conference voted yesterday to refuse to teach at schools near new uranium mines.**

It then voted to continue teaching at the school near the old Mary Kathleen uranium mine.

The Mary Kathleen mine, near Mount Isa, is expected to close in September.

Delegates knew of only one new uranium mining venture in Queensland, at Ben Lomond, north-west of Townsville.

But according to one delegate, the company planning the mining and milling site, had not been granted a mining lease.

The delegate said the company proposed basing staff at Townsville, without a township or school near the mine.

The conference was held in the union's Spring Hill, Brisbane, auditorium.

Both resolutions were put forward by a Charters Towers teacher, Mr Stewart Rose, who said after the meeting that the decision would protect future teachers from the unknown risks of radiation.

"We are talking about a protective action for future situations," he said. "I feel uncomfortable about the teachers now teaching in Mary K

"I look at it in terms of the British principle of reasonable doubt. While there is reasonable doubt about uranium mining and milling hazards, we should apply the principle and remove workers."

Mr Rose told the conference that the second resolution -- if mining continued in Mary Kathleen after 1982, the union should withdraw staff -- would protect future teachers.

This was eventually defeated in a division.

During committee discussion the union president, Mr Lyle Shuntner, said Northern Territory teachers had voted not to have a policy on uranium. He recommended the issue be handled through the Trades and Labor Council and the Australian Council of Trade Unions.

Australian unions were not cohesive on the issue.

The conference voted against suggestions that individual teachers or schools should decide whether to stop teaching.

Mr Shuntner said the teachers' decisions had reflected more teacher involvement in social issues, but not necessarily a more militant union.

CSO: 5100/7544

SOUTH AUSTRALIA LAYS GROUNDWORK FOR URANIUM ENRICHMENT

Canberra THE AUSTRALIAN in English 7 Jul 82 p 3

[Article by Peter Blunden]

[Text] SOUTH Australia is moving closer to establishing the nation's first uranium-enrichment industry.

It has prepared the groundwork for an indenture bill enabling a conversion plant to be built.

This is despite the fact that such a document cannot be drawn up until a feasibility study which began 13 months ago is finished.

The Premier, Mr Tonkin, said yesterday the bill might be introduced before the next State election, due within eight months.

It would allow the establishment of a $100-million uranium-conversion plant, regarded as a stepping stone to the enrichment process.

The Government would hold further talks this month with a European consortium, Urenco Centec, over the setting up of an enrichment plant worth about $1000 million.

Moves to set up an enrichment industry would give Mr Tonkin an election issue. The ALP and the Australian Democrats oppose such developments.

Only last month, a protracted row over the $1000-million Roxby Downs uranium, copper and gold venture ended with the Opposition narrowly failing to veto the project.

Competition between Queensland, the Northern Territory, Western Australia and South Australia to establish a uranium-enrichment industry is intense.

However, the latest moves by South Australia indicate it might be closest to achieving it.

An agreement is being prepared with a group of companies, the Uranium Conversion Joint Venture, even though a spokesman for the group said no commitment had been made.

The companies in the group are Broken Hill Associated Smelters Pty Ltd, British Nuclear Fuels and Roxby Management Services Pty Ltd.

Mr Tonkin said yesterday the bill's introduction would depend on the outcome of the feasibility study.

"We are not dealing with any exact wording at present, but the contents of an indenture are being considered," he said.

"It is obvious the infrastructure which the Government would have to provide must come into the feasibility considerations.

"It makes good sense to have an enrichment plant to begin operations in about 1990, which is around the time Roxby Downs goes into full production," Mr Tonkin said.

A uranium-conversion plant would convert the basic uranium oxide to uranium hexafluoride, the raw material required for the production of enriched uranium used in most nuclear reactors.

CSO: 5100/7544

BRIEFS

PEACEFUL PURPOSES FOR ATOMIC ENERGY--Defense Minister Venkataraman has reiterated India's policy of using atomic energy for peaceful purposes. He was speaking at the silver jubilee celebrations of a training school of the Bhabha atomic research center in Bombay. Describing India as one of the largest scientific manpower in the world, Venkataraman said our scientists should keep themselves abreast of the latest developments in the fields of atomic energy, space communication and ocean technology. It is only then that they would be able to utilize modern technology to find solutions to the indigenous problems of development, Venkataraman added. [Text] [BK020709 Delhi Domestic Service in English 0240 GMT 2 Aug 82]

FRENCH MINISTER'S VISIT--French Foreign Minister Claude Cheysson, now in the capital on a day's visit, has said his country is prepared to supply nuclear fuel for the Tarapur plant under the same provisions as agreed upon with the United States. Speaking to newsmen at Delhi airport on arrival last night, he said the recent high level contacts between Indian and French leaders would be fruitful in identifying areas of collaboration between the two countries. Cheysson will call on Prime Minister Mrs Gandhi and meet the External Affairs Minister Narasimha Rao. Earlier, he was received at the airport by Additional Secretary in External Affairs Ministry J.S. Teja and French Ambassador to India Andre Ross. Vice Foreign Minister of Cuba Torras has also arrived in New Delhi on a 2-day visit. [Text] [BK080903 Delhi Domestic Service in English 0240 GMT 8 Aug 82]

CSO: 5100/2240

PAKISTAN

PEACEFUL PURPOSE OF NUCLEAR PROGRAM ASSERTED

GF150540 Islamabad THE MUSLIM in English 2 Aug 82 p 2

[Editorial: "Atom for Peace"]

[Text] Addressing the seventh "international summer college on physics and contemporary needs," President Zia has said that Pakistan's nuclear programme was geared to solve the country's acute energy problem and use the technology for the development of Pakistan's sagging economy. He has said time and again in the past that Pakistan was not endeavouring to make nuclear weapons, not even to make an explosion preparatory to the making of an atomic bomb. And yet, unfriendly countries have long been conducting a campaign of vilification and maliciously talking of our elementary efforts as a preamble to the production of an 'Islamic bomb.' The propaganda was first started by the London-based weekly, EIGHT DAYS, two years ago and has since been sedulously played up by hostile elements in other countries. In the unending efforts to malign Islamabad, even the fact that our nuclear facility is strictly in conformity with safeguards precribed by the International Atomic Energy Commission is also conveniently forgotten. It is not this country's desire to steal into the nuclear club as some states, which have persistently refused to sign the non-proliferation treaty, have already done. It may be recalled that Pakistan has always been insisting on the Indian Ocean being declared a nuclear-free zone. In view of all this, and Islamabad's commitment to peace, it is outright calumny that other should continue to call into question the why and wherefore of this country's elementary efforts to acquire some measure of nuclear technology for the avowed purpose of augmenting its slender sources of energy.

If Islamabad has been overly cautious to keep peeping toms away from our nuclear facilities, it is because of the fear that these may be knocked out of sheer malice if not out of any genuine apprehension that a nuclear bomb may be in the process of making. After the recent criminal attack on Iraq's nuclear reactor by Israel, which has in the passing also mentioned Karachi it would be little short of callous neglect if this country were to throw caution to the winds. Pakistan neither possesses the high technology to produce nuclear weapons nor has any desire to make the dreaded bomb and invite devastating attacks from manifestly hostile forces. President Zia's umpteenth assurance on Saturday that this country's nuclear facility is meant exclusively for peaceful purposes, without any sinister motive behind it, should help to ally fears, if any, lurking in some quarters.

CSO: 5100/5692

CONSTRUCTION OF 4TH NUCLEAR POWER PLANT DELAYED

OW030353 Taipei International Service in English 0100 GMT 31 Jul 82

[Today's commentary]

[Text] Use of energy is down all over the world. This is a matter of both price and recession. The developing countries find they cannot afford so much expensive energy. They also must get along with fewer products made from petroleum.

The Republic of China is delaying plans to build its fourth nuclear energy plant and abandoning proposals to construct two more. At the same time, the recent heat wave has brought a record consumption of electricity. People in Taiwan no longer sweat, they turn on their air conditioners. Among what used to be regarded as luxuries, the fan came first, the refrigerator second, the TV third, the washing machine fourth and the air conditioner fifth, or something like that. There is an awareness in Taiwan that the oil glut is not going to last so long, nor is the price of oil stuck at 34 U.S. dollars a barrel forever. Economic recovery is inevitable. Even if it is very slow, more energy will be required. That will mean further increases in the price of oil.

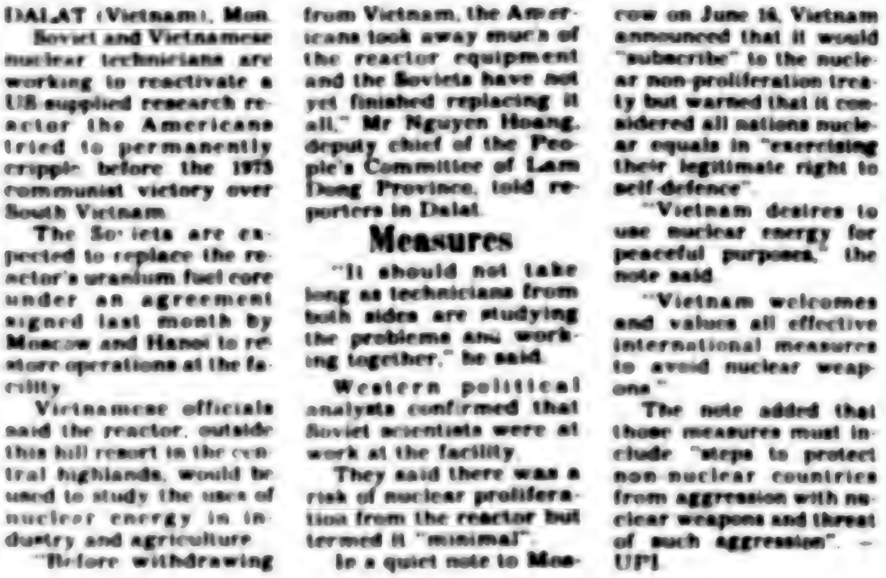
The energy problem has been put on the shelf without any real attempt to seek a resolution. The day of reckoning is coming sooner or later. The supply of oil is not inexhaustable and tends to be in the hands of a relatively few countries.

CSO: 5100/2240

SOVIETS, VIETNAMESE REPAIRING NUCLEAR REACTOR

Kuala Lumpur NEW STRAITS TIMES in English 20 Jul 82 p 14

[Text]



DALAT (Vietnam), Mon.

Soviet and Vietnamese nuclear technicians are working to reactivate a US-supplied research reactor the Americans tried to permanently cripple before the 1975 communist victory over South Vietnam.

The Soviets are expected to replace the reactor's uranium fuel core under an agreement signed last month by Moscow and Hanoi to restore operations at the facility.

Vietnamese officials said the reactor, outside this hill resort in the central highlands, would be used to study the uses of nuclear energy in industry and agriculture.

"Before withdrawing from Vietnam, the Americans took away much of the reactor equipment and the Soviets have not yet finished replacing it all," Mr Nguyen Hoang, deputy chief of the People's Committee of Lam Dong Province, told reporters in Dalat.

Measures

"It should not take long as technicians from both sides are studying the problems and working together," he said.

Western political analysts confirmed that Soviet scientists were at work at the facility.

They said there was a risk of nuclear proliferation from the reactor but termed it "minimal".

In a quiet note to Moscow on June 16, Vietnam announced that it would "subscribe" to the nuclear non-proliferation treaty but warned that it considered all nations nuclear equals in "exercising their legitimate right to self-defence".

"Vietnam desires to use nuclear energy for peaceful purposes," the note said.

"Vietnam welcomes and values all effective international measures to avoid nuclear weapons."

The note added that those measures must include "steps to protect non-nuclear countries from aggression with nuclear weapons and threat of such aggression". — UPI

CSO: 5100/8107

FORMER CNEA OFFICIAL FORESEES CHANGES IN NUCLEAR PLAN

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 25 Jul 82 p 9

[Interview with atomic scientist Jorge Sabato, by Hugo Martinez, in Buenos Aires; date not specified]

[Text] O ESTADO: Is this country building a nuclear submarine?

Sabato: Argentina is equipped to build it, and CNEA [National Atomic Energy Commission] is making the feasibility studies, which will be ready within a year. This is no secret, a strange situation in a country like this, where everything, even the food rations of the military, is a secret. Rear Adm Carlos Castro Madero admitted this. The process was accelerated immediately after the incidents which took place in the Malvinas. From a technical standpoint, there is no problem in implementing the study, and a stringent effort will be carried out.

My status as a citizen, and in particular my responsibility as a citizen, prompts me to favor the idea of subjecting scientific facts to democratic control. I think that the study should be completed and that the decision on the construction of the nuclear submarine should be immediately subjected to an extensive national discussion. It should certainly never be built by a de facto military government. There is no country which has built a single atomic submarine. When the minority advocating armament finds the means for building a submarine, it ends up deciding to build many.

[Question] Do you mean that you would subject the question of the atomic submarine to national discussion?

[Answer] You understood me only partially. My real position is that all policy on armament and all military decisions which involve the citizens should have the participation of the public, through the constitutional institutions.

It is true that, up until the present, from what I know and from what the head of CNEA, Rear Adm Carlos Castro Madero, has said, Argentina did not manufacture the atomic bomb. I don't know whether any nuclear weapon is being manufactured at Campo de Mayo(the largest military quarters in the country), but I have no reason to doubt the statements of the rear admiral. Argentina did not sign the treaties on non-proliferation of nuclear arms; and hence there is only the commitment of its government expressed through CNEA. The more that commitment is reaffirmed, the clearer the Argentine position will be.

To develop and master nuclear energy for peaceful purposes is the best thing that we Argentines can do. In my opinion, we should be opposed to war and the development of the weapons industry, not only for moral reasons, but also because we must not succumb to the nonsense of staring an arms race with our neighbors in South America, or with any other country.

[Question] On what should the strength of a nation be based?

[Answer] It should be founded upon its combined values, but not upon nuclear weapons. To build an atomic bomb is the final rung on the ladder before reaching the final destruction of a country. To waste efforts, skills and resources for that purpose is harmful, and would serve only to satisfy the ego, leading us to be content afterwards with the illusion that we are powerful because we have the capacity to destroy other countries, eliminating them from the face of the earth.

[Question] Is the atomic bomb one of the accesses for rising to the category of a developed nation and a nuclear power?

[Answer] That is a widespread mistake. India has had, from the outset, a military atomic plan based on the deep disappointments and the complex about its colonial status. Its politicians and scientists said: "Let us manufacture the bomb, so that we may be equal," thinking of the one which had dominated it for several centuries. And they produced the bomb. But that capacity did not solve any of that vast country's basic problems: hunger, sanitation, illiteracy. It is a very poor country, with technological islands surrounded by starving cows and people. There is an "atomic ego" which is the main reason that the great powers have become involved in an irrational arms war. The countries which gain access to nuclear technology, although they are underdeveloped, such as India or Argentina, adopt the behavior of the powers. In this race, the capacity for slaughter and destruction is a senseless capacity.

I emphasize that this insane race is not associated with defense, except marginally. The Soviet Union and the United States have a killing capacity that exceeds the requirements of defense or survival. The Soviet arsenals have sufficient weapons to destroy their targets in the United States (the cities with over 100,000 inhabitants) 118 times over. The Americans, in turn, have that capacity 145 times over. It does not appear to me that, in order to kill someone, it is necessary to kill him so many times. When, in the case of a common crime, that of homicide, the killer deals several blows, his crime is punished with stiffer penalties than a common murderer would receive. I wonder what name, what category or what adjective we should give to those responsible for the destruction, more than 100 times over, of Leningrad and its museums, or of New York and its wealth.

It is, moreover, necessary to expose the existence of a arithmetical fallacy concerning the number of missiles required to annihilate a city or raze a country. That number is far lower than the number of missiles existing in the Soviet and American arsenals. This fallacy lies in the fact that, to destroy a city with an amount of weapons five times larger than necessary to accomplish this, or three times larger, amounts to the same thing. The difference in the number of missiles in the possession of one nation and another does not mean less power, after the destruction limit has been exceeded.

that stubborn tendency toward wanting to destroy what has already been destroyed shows the extent of the senselessness that has been reached. It is more beneficial to remain dissociated from that armament-oriented policy to which we have been led by the great powers, dominated by an erroneous concept of the policy.

They act as if nuclear weapons were nothing more than conventional weapons of a different size, without realizing that the war waged with those weapons is different not only in the quantity of effects, but also in the quality thereof. With their use, human beings living in the present and the future die. If Moscow or New York were razed with conventional weapons they could be rebuilt on the same site later. But with the use of nuclear weapons, the radioactivity eliminates all possibilities of recovering the affected area. This did not happen in Nagasaki, because the bomb that was dropped was of small power, compared with the present ones.

All that irrationality is due to the self-interest of the military-industrial complex existing in the United States and the Soviet Union. It should be remembered that, at the conclusion of his last term, President Eisenhower denounced the interests and the pressure which that sector was bringing to bear on the American government. No one has made that denunciation in the Soviet Union, but the military-industrial complex exists there as well, and operates with the same goals and the same irrationality. The militarist ideology is not confined to the capitalist countries, and exists in the socialist bloc countries also, even though they have a different socioeconomic, political and legal structure.

[Question] How would the Marxists justify the existence of this militarist ideology, based on a social, political and legal structure which is different from that existing in the Western countries?

[Answer] The irrationality which the Marxists denounce in the capitalist system stems, in their view, from the way in which the ownership of the goods from production is structured, and its effect on the market. However, the irrationality is associated with certain aspects of the individual; and, in the realm of weapons, it is associated in some instances with the need for profit and, in others, with the goal of achieving greater security.

In the Soviet Union there are two societies. One is that perceived when walking along its streets, and the other (which is essentially military) operates according to its own rules, and is remarkably closed. It belongs to the industrial-military enclave, and is based on defense objectives controlled by its own interests.

[Question] Confronted with changeable situations in the international area, do you think that a nuclear arms race could arise in South America?

[Answer] At the present time, Argentina and Brazil are the leading exponents of nuclear development, and hence the only countries with a capacity to trigger such a race. However, up until now, both countries have been acting cautiously, and have even initiated close cooperation in the nuclear field, for peaceful purposes. Argentina will supply materials for the fuel in the Brazilian powerplants, while Brazil will build components for the Atucha powerplant. Those are only two aspects which attest to an intelligent cooperation, and I think that they give reason for believing that neither of the two countries will succumb to the ridiculous temptation of launching into a nuclear race for military purposes.

The rivalry in the nuclear area for peaceful purposes can and should exist, and it would even be feasible to foster it. That rivalry should stimulate Argentina and Brazil to become better in the field of fuels, and to improve with regard to components. This seems legitimate to me, and I believe that the countries should do it.

[Question] Could not armament-orientation be an impetus for economic growth?

[Answer] This has already occurred in some instances. Japan became radically transformed after the Meiji Revolution, when militarism predominated, strengthened by the victory won over Russia in 1905. But that same ideology prompted the Japanese to start a war with China and, later, to participate in World War II, which they lost overwhelmingly, paying a high price for this.

It was at this time that the Japanese society as a whole realized that the evil lay in militarism. The doors of militarism were closed through the creation of an open, democratic, pluralistic system. On those foundations, Japan created and developed a neocapitalist system, aware of the importance of protectionism and foreign trade, with a fair distribution of income, bearing in mind its own stability.

Throughout its 20th century history, Japan has been an example of how militarism, and its associate, armamentism, can generate growth, but it is also an example of the results that may be accrued with that policy.

However, we cannot fail to give a reminder that any plan governed by the militarist ideology in a nation inevitably leads to authoritarianism. In a country without a democratic tradition, like Argentina, that alternative has already occurred, and there is no guarantee that it will not be repeated in the future. Therefore, the public's active participation in national issues is essential.

Upon leaving the scientist's house, we bought the newspaper, which we read on the return trip. One of the headlines read: "Change in the Argentine Nuclear Plan," and the article noted that Rear Adm Castro Madero had stated that, as a result of the action taken by Great Britain in the South Atlantic, Argentina was forced to make changes in the philosophy of the Argentine nuclear plan.

The newspaper stated: "One result of this is studying the feasibility of building an atomic submarine."

The commentary pointed out: "It is regrettable that this should happen, because Argentina had made the decision to use all its capacity for peaceful purposes; but Great Britain's use of nuclear submarines which wiped out the operational capacity of our war fleet led us to make that decision."

While the train covered the final meters, the ideas expressed by Sabato a short time earlier took on a significant force. The Argentines, tremendously belligerent in dealing with their issues, have the opportunity to begin the great debate which Jorge Sabato mentioned.

2909
CSO: 5100/2233

BRIEFS

NUCLEAR BOMB PROJECTS DENIED--Rio de Janeiro, 7 Aug (AFP)--Gen Alacyr Frederico Werner has asserted, in statements published in this city today, that there is no government-level project to use nuclear energy for warlike purposes. The general, who is chief of staff of the armed forces, accepted the use of nuclear energy for the propulsion of ships and submarines, but he ruled out any possibility that the country would develop or manufacture nuclear devices. Werner stressed that Brazil has chosen, in accordance with its peaceful policy, to apply nuclear energy for peaceful purposes for the benefit of the people and the development of the country. Werner said in conclusion that the armed forces would consider the hypotheses of possessing a nuclear bomb only in case a probable enemy had one, but there is no such enemy. [Text] [PY072002 Paris AFP in Spanish 1759 GMT 7 Aug 82]

DEMONSTRATION STAGED IN ANGRA--Angra dos Reis, Rio de Janeiro--Nearly 500 persons staged another demonstration here against the construction of nuclear plants in Brazil yesterday. The demonstration, which consisted of parades and debates, was sponsored by the group "Hiroshima, Never Again," which is made up of representatives of 30 organizations and the Workers Party. [by FOLHA's special correspondent] [Excerpt] [PY170320 Sao Paulo FOLHA DE SAO PAULO in Portuguese 9 Aug 82 p 5]

CSO: 5100/2240

USSR TO AID IN BUILDING CIENFUEGOS NUCLEAR PLANT

PA061546 Havana International Service in Spanish 0000 GMT 5 Aug 82

[Station commentary]

[Text] Cuban and Soviet specialists recently approved all the details for the planning and construction of the first nuclear powerplant to be built in Cuba, with the Soviet Union's technical aid. The powerplant, to be built in the port city of Cienfuegos, will include two electricity complexes with 850 mw. The model project, used previously in similar works in the Soviet Union and other socialist countries, was modified in keeping with Cuba's climatological and natural conditions. Examples of this are the new coatings and anticorrosive materials used, which are ideals for tropical climates. Another characteristic of the new plant is that it will be able to withstand earthquakes of up to 8 degrees on the Richter scale, waves and the shock of being struck by a 20-ton plane flying at 750 km per hour.

It must be noted that such a project is no longer an isolated case in our country, where new works are undertaken every year to adjust Cuba's infrastructure gradually in an effort to achieve development.

In the energy area in particular, we must note that Cuba's need to produce more electricity is closely connected to the imperative obligation to implement the policy of industrialization and socioeconomic development outlined by the revolutionary government after January 1959. Until then, the distribution of electricity had been conceived to cover the needs of the island's large cities and towns, its most important commercial centers [words indistinct]. Meanwhile, in the peasant zones and in the homes of the lower classes the lack of this service accompanied hunger and the lack of hygienic conditions.

In 1958 the U.S. company that controlled the electricity business here in Cuba had only installed 397 mw of power. With this inheritance and the blockade imposed by our northern neighbor, it was only logical to assume that it would be impossible to further the revolutionary government's industrial expansion plans. Therefore the breakthrough of our country's electrical industry began immediately.

In its effort to promote the electrical sector, Cuba received the Soviet Union's determined and firm support. The first agreement, signed in 1960 by the two nations led to the construction of a thermoelectric plant in the city of Santiago de Cuba, in the easternmost part of the island, and another in Havana's Mariel area. Other energy plants were built later throughout the country. During the 1976-80 period some $600 million were invested and the installed capacity increased by 1,069 mw, almost doubling the system's capacity in 1975.

During the 5-year period ending that year, Cuba produced 5,885,376 mw of power. Despite this decisiveeffort, which resulted in a marked increase in our country's production of electricity, the increasing needs derived from the difficult path of development are yet to be satisfied. This is how the need to build the first nuclear powerplant in Cuba came about.

CSO: 5100/2240

FEAR OF POSSIBLE NUCLEAR CONTAMINATION VOICED

Johannesburg THE STAR in English 26 Jul 82 p 16

[Article by Bruce Heilbuth]

[Text]

Hoo boy, will we ever be free of worry about that damn great atomic pile on the other side of Table Bay? To Cape Town people it's like endemic toothache, always in the background and flaring into the foreground each time there's a new alarm there.

Last month three crooks bluffed their way through the Koeberg security. They were after money but it might have been a trio of saboteurs.

Last week it was a fire in the nuclear plant's electrical building.

In between the two was the fatal bomb blast in the liftshaft of the President's Council buildings in the city. And the echoes of the murderous IRA incidents in Central London add to the fear psychosis that has plagued this controversial power project from the start.

Says the acting chairman of Koeberg Alert, Professor Arnold Abromowitz: "The public will want more than bland assurances that these incidents will not happen after the reactor has 'gone critical', when they could have incalculable health and safety consequences."

Nor was the local citizenry cheered much by a report by the Koeberg power station manager and tabled at a city council Exco meeting after the fire incident.

It stressed that "no emergency situation is envisaged which would require immediate evacuation in haste. People in the contaminated areas would be evacuated in a controlled manner in small groups."

That's just dandy. But it's not the size of evacuation groups that concerns us, nor the extent of the control exercised. It's the mere thought of having to get out at all, however remote the possibility. A pox on Koeberg, in fact.

For the record, the R1 800 million N-plant will become operational in a few months.

If the worst came to the worst, perhaps we city workers, barely 20 km away, could all go underground like moles — for Cape Town is rapidly becoming a split level city.

When Sol Kerzner's mammoth new Southern Suns hotel is completed late next year a vast extra tract of underground shopping space will be added to the many acres already developed.

In addition there is a plan for Thibault Square, near the bottom of Adderley Street, to be hollowed out to accommodate three levels of underground parking space for 600 cars. This would be the deepest occupied excavation in the city — and could be a pointer to the direction of Cape Town's future development: not upwards, but downwards.

Something drastic has to be done about Cape Town's off-street parking problem, anyway. It's chronic in the minuscule centre city area and very costly.

The other talking point down here is the exposé, if one can call it that, of the widespread sale locally of sharkmeat in many different forms.

We'd always thought sharks were caught mainly for their fins, which are exported mainly to the Far East for making soup. In fact it emerges that we have been eating it for years under various aliases . . . silver or pearl flakes, tope, dark fish, monk fish. And enjoying it. There's also shark biltong, said to be as good as any of the conventional types and half the price.

Just how big the local industry has become is evident from the annual catch of two million sharks by one Western Cape fisheries co-op alone.

Those people who shudder at the thought of eating potential maneaters need not worry on this score. The shark caught are Vaalhaai and Ratelahaai, which weigh up to 300 kg but do not attack man.

I still won't eat it!

CSO: 5100/5693

IAEA 'CONTROL' OF NUCLEAR ENERGY PROPOSED

Eleven Member States

LD290602 Moscow TASS in English 0554 GMT 29 Jul 82

[Text] Moscow July 29 TASS -- In the past years the International Atomic Energy Agency has become a recognized centre for the promotion of international cooperation in peaceful uses of atomic energy and made an important contribution to the prevention of the spread of nuclear weapons in the world, Andranik Petrosyants, the chairman of the USSR State Committee for the Utilization of Atomic Energy, writes in PRAVDA. In the article devoted to the 25th anniversary of the IAEA he points out that 11 states are now members of the agency.

The most important aspect of the activity of the International Atomic Energy Agency, the author writes, is the exercise of control over the use of nuclear material and equipment. At present the agency controls about 98 per cent of nuclear plants and the overwhelming part of nuclear material in countries that have no nuclear weapons. In more than 40 of such countries the entire activity in the nuclear sphere is under the IAEA control. But the world public is concerned over the fact that in some non-nuclear countries a part of nuclear plants and materials is not yet under the agency's control. This particularly refers to Israel and the Republic of South Africa, countries that are conducting an aggressive, expansionist foreign policy.

The system of control exercised by the IAEA is described not without reason as a unique phenomenon, the article says. For the first time it has been possible to agree on international control on territories of a great number of sovereign states which proves irrefutably that given good will it is possible to agree also on control in other spheres of arms limitation and disarmament, to ensure the confidence of the world community that the countries will honour the commitments they have assumed.

The USSR attaches great significance to further development of the existing system of control, the author writes. The necessary research and developments are implemented in the Soviet Union.

The training of IAEA inspectors and personnel for national systems of stock-taking and control of nuclear materials are regularly held. The Soviet Union also gives support to other measures for non-proliferation of nuclear weapons implemented by the agency. Of special significance among them are the organizing and technical measures for internationalization of separate elements of the nuclear fuel cycle. "The activity of the IAEA over a quarter of a century, the activity that was successful on the whole, gives the grounds to hope that the agency will continue making a worthy contribution to international cooperation, to ensuring confidence and security in the world."

'Negative Phenomena' Noted

LD281752 Moscow TASS in English 1718 GMT 28 Jul 82

[Text] Moscow July 28 TASS -- "The whole history of the International Atomic Energy Agency (IAEA) is an example of successful cooperation between countries with different social systems in the interests of preserving peace," IZVESTIYA writes today.

"The existing international regime of non-proliferation of nuclear weapons, which has proved to be viable and effective," the article points out, "not only contributes to maintaining stability in international relations, but also creates a reliable basis for developing large-scale cooperation in the field of peaceful uses of atomic energy. This international cooperation was initiated by the USSR.

"Over 25 years IAEA has succeeded in resolving many problems posed to mankind by its growing demand for energy, in the field of industry, agriculture, medicine and scientific research".

"But," the newspaper goes on to say, "with a generally favourable process of peaceful uses of atomic energy it must be noted that there have appeared alarming aspects in the field of nuclear energy in the world recently. Among the negative phenomena note shall be made in the first place of the line of conduct chosen by the U.S. administration, and its course for building up the arms race and stake on positions of strength."

"The main way to lessening and ultimately eliminating the motives behind the wish to obtain nuclear weapons is a general improvement of the political climate in the world, elimination of seats of conflicts, attainment of real results in curbing the arms race and in disarmament, ensuring security guarantees of non-nuclear states and creation of non-nuclear zones. A decisive role in that is played by the specific measures towards lessening the threat of nuclear war. And in this connection one can hardly overestimate the significance of the history-making move of the USSR, which committed itself not to be the first to use nuclear weapons," IZVESTIYA stresses.

CSO: 5100/2240

ELECTRIC POWER COMPANIES SIGN CONTRACT WITH NUCLEAR RESEARCH CENTER

Copenhagen INFORMATION in Danish 27 Jul 82 p 1

[Article by Torgny Moller]

> [Text] The Riso research station has signed a contract with ELSAM [Organization for Coordination of Electric Power in Jutland and Funen] and ELKRAFT [Electric Power] on nuclear cooperation.

The electricity associations ELSAM and ELKRAFT have entered into an agreement with Riso on nuclear cooperation with the Riso research station. The agreement means that Riso will receive money from the electric power plants in return for making its expertise available to them--for example, when the electric plants need expert assistance in dealing with another state institution like the Environmental Agency which at the moment is reviewing the salt dome studies made by the electric companies.

This was disclosed at a meeting of section leaders at the research station at which the management and section leaders also estimated that the current situation with regard to nuclear power means that this source of energy will not start being introduced for at least 10 years. Riso has therefore made it clear to ELSAM and ELKRAFT that if Riso is to leave its nuclear power expertise "lying in a waiting mode" for 10 years, the electric companies will have to pay for it. Riso and the electric companies have held talks on the matter over a long period of time, but in July the "nuclear cooperation" program was agreed on. As they said at the meeting, this agreement enjoys a high priority at Riso.

It opens up the possibility that the electric companies can use Riso as a base for the anticipated technical discussions with the authorities on such things as the storage of highly radioactive waste in salt domes in West Jutland. For Riso, the agreement means an increase in the institution's total mass of contracts, in other words, more or less commercial contracts that guarantee the research station a certain amount of independence from the state.

At this time, Riso has total contracts worth 43 million kroner--but a budgeted deficit of 1 million kroner. However, new contracts are on the way and some of the contracts are more profitable than others. Thus there is currently a contract with a Japanese firm that has created a stir at Riso because it is so "secret" that the management will not say how large it is--only that it provides Riso with a covering payment of 1 million kroner.

Dissatisfied Section Leaders

At the same meeting of section leaders, criticism was also voiced of the so-called "spring" and "fall maneuvers" at Riso, e.g. the so-called re-evaluations of the work of all sections which the management has instituted, partly for the purpose of setting up an independent management section.

The criticism emerged when director Niels Busch presented a so-called "conversion pool" for Riso activities. It is a list of the major areas that Riso should give the highest priority and several section leaders protested against the clear thrust toward nuclear power expressed by the list. Section leader Carl Jorgen Christensen felt that wind power, which is officially given a high political priority, should have been mentioned among the major areas. It was not. Section leader Skytte Jensen said that biotechnology should be included as an item. The management will take a stand on this later. And section leader Heinz Floto criticized the whole re-evaluation program, which he said created confusion among Riso workers, while section leader Niels Hansen criticized what in hiw view was the narrow focus on nuclear power in the conversion pool.

The management did not agree with this criticism and said that Riso's facilities had to be taken into account.

The priority list has not yet been presented to Riso's cooperation committee.

6578
CSO: 5100/2235

PROGRESS IN RESEARCH ON HIGH TEMPERATURE REACTOR

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 21 Jul 82 p 25

[Article by Kurt Rudzinski: "Power and Heat From the High Temperature Reactor; No Core-Meltdown in Case of Cooling Failure/Energy for Coal Processing"]

[Text] Safety is a matter of life and death for reactor technology. Although conventional nuclear power plants with light water reactors also fulfill the safety requirements demanded of them, it is a characteristic of the high temperature reactor (HTR) that its safety is considerably greater. The helium-cooled high temperature reactor or spherical fuel element reactor, which Prof Rudolf Schulten (Juelich Nuclear Research Center) has been developing since 1964, simultaneously constitutes the only really important contribution by the FRG to the utilization of nuclear energy. The other reactor types--light water reactors (LWR) and breeder reactors--have been borrowed from the United States.

The appeal of Schulten's idea lies in the simplicity of principle of his reactor system and in its "inherent" safety which also depends on physical laws. If the cooling fails, its reactor core cannot melt down, but on the contrary the chain reaction of the uranium fission breaks off by itself when the temperature slowly rises, because the HTR has a "negative temperature coefficient of reactivity." On the other hand, this implies that its output can be regulated merely by regulating the flow of collant gas, which is in fact being done.

The basis for the simplicity of the HTR is the use of tennis ball-sized graphite spheres as fuel elements. These contain the nuclear fuel in tiny particles firmly embedded in the exceedingly dense "pyrocarbon." Due to their high temperature resistance, mechanical stability and density they make the entire complicated and sensitive shell and structural framework of the reactor core in the light water reactor and the breeder reactor superfluous. In dense masses in the cylindrical graphite-lined cavity they themselves form the reactor core. Schulten developed this concept after he had experienced the cumbersome and time-consuming exchange of fuel elements during a visit to an English power plant. The graphite spheres are continuously inserted from the top into the reactor space. They gradually "flow" down by their own weight. There they are withdrawn individually, and after ascertaining the degree of burn-up, they are reinserted into the reactor or discarded. For this reason there are no interruptions in operation for exchanging fuel.

Due to the physical properties of the graphite, Schulten in a simple manner avoids the great metallurgical difficulties which face reactor engineers because of the metallic fuel element cladding, which is highly sensitive to neutron bombardment and overheating at temperatures as low as 800 degrees, in the supports of the reactor core of the light water reactor and of the breeder. Graphite does not melt, but gasifies only at about 3,600 degrees Celsius. In addition, the spheres safely contain the radioactive fission products up to 2,000 degrees. (With the AVR experimental reactor built at Juelich, operational temperatures of 950 degrees have been reached for 3 years.) Graphite is totally unaffected by the neutron bombardment. It also moderates the energy-rich neutrons, which is the precondition for the controlled process of uranium fission. In the light water reactor the water assumes this function and may therefore--and also in order to assure safe heat transfer--under no circumstancs evaporate.

Another advantage of the graphite balls lies in the fact that reactor disturbances take place slowly. Since the balls contain relatively little uranium in comparison to the graphite mass, the power density, that is to say the heat emission each second per cubic meter of reactor volume, is only 6 megawatts for the HTR. For the light water reactor it is 80 megawatts and for the breeder reactor as much as 600 megawatts--an enormous amount of energy, the safe control of which presents a decisive disadvantage for the breeder, which requires extraordinary expenditures for safety. The time available in which to shut down a reactor is also characteristic. In the event of a malfunction the light water reactor has 20 to 30 seconds available, but the breeder less than 5 seconds. For the HTR, on the other hand, it is 3 hours; that is to say, sufficient time for intervention and repairs.

A German safety study for a 1,160 megawatt HTR reactor has, as a comparable U.S. study (AIPA [expansion unknown]) showed years ago, confirmed the extremely high degree of safety of this type of reactor and the very long malfunction time constant. It is in any case characteristic that the actual analysis of cases of malfunction for the high temperature reactor does not even begin until the point where it ends for the light water reactor, that is to say in the range of "worst conceivable accident."

If, as a result of any kind of defect, even those difficult to imagine, a portion of the helium collant were to escape from a high temperature reactor, only those who work at the power platn would possibly be affected. Helium does not become radioactive. The radioactivity of the gas which depends on trace contamination is so small that even if the gas were to leak outside, the radiation limits permitted at the fence of the power plant would not be exceeded.

The great safety alone should make the high temperature reactor the preferred, if not the only acceptable, reactor for power production. This is even more valid since hot steam of 550 degrees and more can be produced with helium.

However, this makes a power generation efficiency of about 40 percent possible instead of the approximately 30 percent available with light water reactor steam which is only about 300 degrees, something which in practice means a 25 percent greater thermal utilization. This could have been demonstrated long ago by the HTR power plant with 300 megawatts output which is under construction near Uentrop/Hamm, if an exaggerated and bureaucratic licensing method had not constantly added new, costly and time-consuming safety conditions, which--even more than for the LWR--often enough do not bring any additional safety.

The competitiveness of the high temperature reactor as compared to the light water reactor should scarcely come into question. If at all, HTR power would be only a few percent more expensive. But if one takes into account the high availability due to the technically simple design and the low subsequent costs which result from the simpler interim and final storage of the spent spherical fuel elements, the economics of the high temperature reactor should appear more favorable. In addition, due to its different neutron spectrum the HTR can turn thorium into the nuclear fuel uranium 233. This would make it possible to stretch the nuclear fuel reserves by a factor of eight.

A new way for the HTR technology is aimed at building standardized small HTR modules with a thermal output of 200 to 250 megawatts for steam production and process heat. Because of the small dimensions steel pressure vessels may be used, just as for the light water reactor, instead of the prestressed concrete vessels necessary for the large HTR reactor. Such modules can be connected if needed, so that they achieve the thermal output of large power plants. Economic production units could be achieved by connecting only four components, in the opinion of the Society for High Temperature Reactor Technology. The fundamental principle for the module design is to obtain a maximum degree of "passive safety." The 3-meter [illegible] diameter of the "reactor core" has been chosen so small that in the event of a coolant failure all the released heat can be given off without additional measures toward the pressurized vessel through thermal conductivity and radiation.

The particular advantage of this system would lie in the high flexibility of the plant size as well as in a reduction of the construction time and licensing procedures through standardization. Due to the high degree of safety, such modular plants could also be built near cities, and for the production of district heat as well as of power. Furthermore, the small construction units should be suitable for export to nations with little industrialization.

It will certainly take some time before the great thermal potential of the HTR can be utilized for chemical processing as well. Of special interest is coal processing; but it is primarily a matter of producing synthetic gas, a mixture of carbon monoxide and hydrogen, which can be produced by gassification of coal with hydrogen. From that one can among other things produce methanol with conventional large-scale technology, which is suitable directly as automobile fuel or can be converted catalytically with zeolites into carbohydrates. Schulten also proposed a new kind of method for chemical district heat transportation. Although the competitiveness of the synthetic products has not been proven at this time, coal processing constitutes a vital necessity for German coal mining. This is why the Land of North Rhine-Westphalia has such vital interest in the development of the HTR.

For process heat, diverting and utilizing the heat with these high temperatures still poses great difficulties. In order to extract synthetic gas from brown coal, temperatures of 700 to 800 degrees are necessary, and for hard coal--according to the Lurgi method--as much as 800 to 900 degrees. Since the heat resistance of conventional metal alloys are no longer sufficient for such processes even at temperatures above 750 degrees, intensive work is under way at Juelich on the development of high temperature-resistant metal alloys, which can last for decades, for heat exchangers, separation furnaces and fittings. One of these synthetic materials has already passed endurance tests of more than 50,000 hours at between 800 and 900 degrees. However, the goal is a synthetic material which can safely resist temperatures of more than 1,000 degrees. Ceramic materials such as silicon nitrite seem to be promising. The development of this, in which Rosenthal Technik AG is a major partner, still requires a great deal of fundamental research.

With the great, inherent safety of the high temperature reactor and with the promising application possibilities, the FRG possesses a unique advantage, yes a trump card in nuclear technology. It would be irresponsible to break off this development, which is what the Research Ministry is leaning toward Furthermore, the high temperature reactor is the only reactor type which perhaps offers the chance of making nuclear energy acceptable to its opponents as well.

11949
CSO: 5100/2230

PHENIX REACTOR MALFUNCTIONS: CAUSES CITED

Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 p 298

[Text] Investigations of the 29 April incident in the Phenix breeder reactor are still continuing. But several days after the incident, the first examinations made by technicians led to the following observations (reported in an inhouse CEA [Atomic Energy Commission] document).

1. On Thursday, 29 April at 2145, while the reactor was functioning at two-thirds of its nominal power, the hydrogen detection device was activated, indicating a leak and the start of a reaction between steam and sodium in the steam generator no 2 (GV2).

The instructions for such an event (stopping the reactor, then draining the water and steam from the three steam generators, and filling them with nitrogen under 7 bars) were immediately implemented, which stopped the sodium-water reaction.

It will be observed that the safety membranes of the steam generator involved remained intact, which shows that the rise in pressure due to the chemical reaction did not reach the point of rupture, 10 bars.

2. Because of the failure of two nitrogen supply valves of the GV2, which were temporarily jammed, the water-steam part of this system was not filled with nitrogen. The operators did not immediately realize this.

As there was no counterpressure to block its passage through the leak, the sodium was able to penetrate gradually into the water-steam circuit of the GV2's reheater.

3. Friday, 30 April, 1900 hours. After the release of the nitrogen intake valves, this sodium reached the main valve (then in a closed position) blocking the steam duct leaving the GV2's reheater. This valve is designed to operate with water-steam, not in the presence of sodium. A slight leak of sodium to the exterior caused a fire to start. The fire was quickly extinguished by the immediate response of the security services.

4. The consequences of this situation on the use of the reactor are now being evaluated.

The first observations suggest:

a. That only the GV2's reheater was affected by the incident and that the other parts of this steam generator (heater, economizer-evaporator) are intact;

b. That the quantities of sodium going through the steam insulation valve remained limited and were present in just a few meters of the duct.

More extensive investigations in the days to come, will enable us to identify the nature and location of the leak, to better understand exactly what happened, and give us the information to make a decision--if necessary--about modifying the equipment and procedures. It seems quite likely that at least a part of the 12 modules of the GV2 reheater will have to be removed and replaced.

The results of this analysis, which should be ready in a few weeks, will give the safety authorities information on which to determine the conditions and time for starting the reactor in operation again.

5. Generally speaking, it will be observed about these incidents:

a. That they occurred in the non-nuclear part of the plant.

b. That the chemical reactions taking place involved non-radioactive sodium of the reactor's secondary circuit. At no time did these incidents cause the slightest risk to the environment or to the plant's operating personnel. On this occasion the personnel showed perfect calm and coolness in their response.

c. That the sodium-water reaction is the first affecting the Phenix steam generators since this prototype plant began to operate in 1974.

d. That through the protective and safety measures taken in the reactor's design, this reaction lasted for several minutes, bringing together not insignificant quantities of steam (about 1 kilogram) and sodium without any repercussion outside.

In closing, these events should not cause us to forget that the Phenix plant, since it began to operate, has produced 10.5 billion kWh with an average load factor above 60 percent.

7679
CSO: 5100/2228

FRANCE

REPORT ON FUEL CYCLE URGES MORE REPROCESSING CAPACITY

Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 pp 293-294

[Article on the report of the Agency for Nuclear Energy: "Nuclear Energy and its Fuel Cycle: Prospects Until 2025"; 287 pages, OECD, Paris, 1982; ISBN 92-64-22306-1]

[Text] 1. There are no reasons of a technical or industrial nature that would prevent the supply of nuclear fuel and fuel cycle services from meeting a realistic level of demand for the rest of this century and even well beyond.

2. In the short term, a great number of firm orders for reactors will be required if the projected nuclear programs are to be actually carried out.

3. The present level of supply of fuel cycle services greatly exceeds the immediate demand, but an expansion in several areas will be necessary before the end of the century in order to follow the projected progression of demand.

4. In the long term, the maintenance of the nuclear energy resource will inevitably lead to changes in the nuclear fuel cycle; in particular, there will be a transition to reactors that use fuel more efficiently, such as the breeder reactor.

5. Countries which lack abundant energy resources (particularly uranium) are interested in an accelerated introduction of breeders in their industry.

These are some of the main conclusions of the report which the OECD's [Organization for Economic Cooperation and Development] AEN [Agency for Nuclear Energy] has just published under the title of : "Nuclear Energy and its Fuel Cycle: Prospects Until 2025." This report analyzes the prospects of the worldwide and regional supply and demand of uranium, thorium, heavy water, and services related to the fuel cycle, such as uranium enrichment, the manufacture of fuel, and the storage and processing of irradiated fuel. The report covers three successive periods: the short term (until 1990) and the mid term (1991-2000), based on projects and projections provided by the governments involved, and the long-term period (until 2025), based on a range of hypotheses.

In recent years, the rapid evolution of the conditions governing economic and energy growth in the world, along with changes in the conditions affecting nuclear energy itself, have very quickly invalidated a number of forecasts. Of course, this is also true for projections about the expansion of the nuclear power capacity, given the changing nature of national projections in this area, especially when they cover half a century. In spite of these difficulties, it is felt that the analyses contained in this report are of use for the long-term planning undertaken by governments, the nuclear industry, electric power companies, and even those who handle related services.

For the mid-term period, from 1990-2000, the report reaches the following conclusions:

The growth of the nuclear power capacity during this decade is much less certain. A good many countries are preparing plans for this period, and those which have provided estimates expect the expansion of nuclear power to continue. Based on the projections of the working group on needs related to the nuclear fuel cycle, the nuclear power capacity in the OECD countries should be between 500 to 680 GWe between now and the end of the period; for the CAEM [Mutual Economic Assistance Committee] countries, the corresponding figures are 170 to 290 GWe, and for the rest of the world, from 90 to 120 GWe. However, because of political decisions and international events whose impact goes beyond the attributions of the working group, the nuclear power capacity could be outside these ranges.

Storage and Reprocessing

As in the short-term period, nuclear power should consist essentially of water reactors, and it may well be that many countries will not reprocess their irradiated fuels. Some countries may encounter difficulties in storing their irradiated fuel, unless adequate storage facilities both at the reactor site and at a distance, or long-term storage facilities, are built at the right time. The construction and operation of these storage facilities could be an important sector of activity in itself. However, no technical problems are expected in this area, and arrangements of an institutional nature should be carefully examined by the appropriate national and international bodies. The working group felt that this matter exceeds the limits of its present mandate. It is to be expected that many countries will reprocess at least part of their irradiated fuel in order to produce the plutonium needed for the generation of fast reactors toward the end of the century. The calculations of the working group show only the capacity required for this purpose.

Moreover, it will probably be necessary to increase the reprocessing capacity if, from the point of view of the environment, it were considered desirable to reprocess all the irradiated fuel or if it became of interest to use plutonium in thermal reactors. This expansion would have as its inevitable corollary the establishment of facilities to store plutonium and the quantities of highly radioactive liquid or packaged wastes that would be produced. However, there is still a sizeable margin of maneuver, allowing the countries to adapt their facilities and procedures to suit local conditions. As in the case of the facilities which store irradiated fuel, the necessary arrangements should not present any insurmountable difficulties.

Concerning the supply of uranium, the working group on needs related to the nuclear fuel cycle concluded from a comparison of its results with those of the AEN/IAEA [International Atomic Energy Agency] working group on uranium resources that meeting the demand for uranium during this period should not cause insurmountable technical or institutional problems. Constraints other than those of a technical nature might arise, some of which could have an impact on the theoretical supply capacities and demand projections. The stagnation of the uranium markets during the present decade may sometimes slow down commercial prospecting and mining ventures even if, through long-term contractual arrangements, the suppliers do have a stable demand and a reasonable price in economic terms, which they need. It is clear that the possibility of having adequate supply levels in the longer-term period (after 2000) will depend on the success of the prospecting and mining done in the short or mid term, which in turn will depend on the establishment of firm projections of demand and the establishment of favorable political, economic, and commercial conditions.

No technical problems are expected in the establishment of appropriate facilities for the supply of heavy water, of enrichment services, or fuel manufacturing during this period, for the construction time of these facilities is short in comparison with the time required to build a reactor. In the area of enrichment, there will probably be competition between the suppliers. The North American area of the OECD not only has a capacity that greatly exceeds its own needs, but it is increasing this capacity. In the European area of the OECD, some large facilities are in operation or have reached various phases of construction or planning. The needs of the Pacific area of the OECD exceed its presently predicted capacity, but the member countries are actively studying the possibility of undertaking a major enrichment project in that area.

7679
CSO: 5100/2228

BRIEFS

CHINON FUEL ELEMENT PROBLEM--After a 3-week interruption, the fuelling of the Chinon B1 reactor resumed on 26 May. The deterioration of five fuel elements (of a total of 157 elements) caused by the "defective assembly of a handling device" had caused the fuelling to be stopped on 6 May, 3 days after it had started. The damaged elements have been replaced. The fuelling operation was completed in early June. The reactor is scheduled to go critical in mid-July, with the first kWh to be delivered to the power system in early September. [Text] [Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 p 298] 7679

CRUAS NUCLEAR PLANT TESTS--The first unit of the Cruas nuclear power plant (Ardeche department) began its overall test phase in early May. It should be connected to EDF's [French Electric Power Company] network on 1 April 1983. The entire plant, which consists of four 900-MW units, could operate at full power by the summer of 1984, or 6-1/2 years after the start of work on the project, said the construction chief, Mr Jean-Claude Postollec. In terms of power, Cruas will then be the third power plant in the Rhone-Alpes region, behind Bugey and Tricastin. The construction schedule was met, and the initial estimate of the cost of the plant, 6.2 billion francs in 1976, or about 12.5 billion francs today, was not exceeded. [Text] [Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 p 298] 7679

COGEMA BUYS URANIUM INTEREST--The COGEMA [Nuclear Materials General Company] has purchased stock in the firm, Imetal. The press release issued on this stock acquisition states: "Since the start of 1980, it has been apparent to government officials that movements in the stock of Imetal might give some cause for fear of a change in the structure of its capital, a change which might not be in accordance with our national interest. Through its subsidiaries, Imetal controls in France a significant production of uranium; abroad it holds a large part of the stock of a uranium mining company in which the COGEMA also owns stock (COMUF-SOMAIR-AMOK) [SOMAIR: Air Region Mining Company]. On two occasions, in February 1980 and in April 1981, the government authorized COGEMA to acquire stock in Imetal. COGEMA now controls 17.33 percent of the stock of this company." [Text] [Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 p 297] 7679

PALUEL'S 1300 MW PLANT--Work is continuing smoothly at Paluel, where the first PWR [Pressurized Water Reactor] 1300 MW units to be operational in France are now under construction. The first unit will be connected to the electric power system sometime in 1983. Paluel is to have four units. In addition, nine other 1300 MW units have already been begun, and five additional units have been decided upon for the 1982 and 1983 programs. In all, 18 units may be considered as in progress. They are located at nine sites: Paluel, Penly, Flamanville (on the seashore), Cattenom, Saint-Alban, Belleville, Nogent, Golfech, and Chooz. [Text] [Paris REVUE GENERALE NUCLEAIRE in French May-Jun 82 p 294] 7679

CSO: 5100/2228

END

END OF
FICHE
DATE FILMED

9/7/82